

ULTRASTAB 867-700I & 867-700U Precision Current Transducer

INTRODUCTION:

The ULTRASTAB 867-700I and 867-700U Current Transducers, are the latest models of the ULTRASTAB Current Transducers.

They are the third generation of current transducers from DANFYSIK with sensor and PCB integrated in one assembly.

The 867-700 sensors features a new type of zero flux detector with extreme low noise level, compact in size and competitive in price.

Measuring range is 0-700A from DC to <math><500\text{kHz}</math> with a temperature coefficient lower than 0,5 ppm/°C (current mode). At 700A primary current powered with $\pm 15\text{V}$ type 867-700I has an analogue output current of 400mA. 867-700U has an analogue output of $\pm 10\text{V}$.

Output noise and noise feed back to the main conductor are both extremely low, and electrostatic shielding ensures maximum immunity against external electrostatic fields.



THE 867 FEATURES:

- Bandwidth DC to <500kHz
- Linearity better than 3ppm
- $T_c < 0,5\text{ppm}/^\circ\text{C}$ (current mode)
- Resolution better than 0.05ppm
- Traceable absolute calibration
- Bipolar – up to 700A primary current with output of 400mA (867-700I) and output of 10V (867-700U)
- Low noise on the output signal
- Noise feed back to main conductor <30 μV

APPLICATIONS:

- Feed back element in precision current regulated power supplies
- Feed back element in high performance gradient amplifiers for MRI

WORKING PRINCIPLE:

The DANFYSIK ULTRASTAB 867 Current Transducer system is a unique design, based on the zero flux principle for galvanically isolated current measurement.

ULTRASTAB 867 has a built-in free-running oscillator, which drives the zero flux detector circuitry.

With the primary current conductor through the transducer head center hole and current

flowing, the electronics will generate a current in the built-in compensation winding counterbalancing the primary ampere-turns.

A very sensitive and extremely low noise detector circuit will detect when zero flux is obtained, and an analog current signal will be generated at the output terminals in direct proportion to the primary current.

INSTALLATION:

The ULTRASTAB 867-700 transducers are fully self-contained, requiring only a +/- 15V-voltage supply. All connections are via a 9-pole D-sub socket.

The transducers can be installed in any orientation and have a high immunity against external magnetic and electrostatic fields.

867-700I and 867-700U are both delivered with the standard transfer ratio of 1750:1

External burden resistors/ shunts can be connected to the 867-700I version, however it is important not to use a bigger load than specified. Please refer to the technical specifications under “External burden resistor” where the max values of the burden resistors are listed.

We recommend to keep the power loss as low as possible, in the burden resistor(s), in order to minimise the T_c influence from the burden resistor(s) on the measurement.

STANDARD FEATURES:

The ULTRASTAB 867 is equipped with opto insulator for status interlock reading. An LED on the front shows NORMAL OPERATION i.e. interlock status ok.

The ULTRASTAB 867 has a built-in “scanning/lock in circuit” for automatic recovery to normal operation after overload condition.

ACCESSORIES

- 9-pol D-sub with 2m shielded cable
- 2.5 Ohm Burden resistor (4 x 10 Ohm), 0.1%, $T_c < 3\text{ppm}/^\circ\text{C}$
- $\phi 30$ mm busbar

ORDERING INFORMATION STANDARD:

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|----------------------------------|-------------------|
| • 867-700I current transducer | Part no. 81088937 |
| • 867-700U current transducer | Part no. 81089073 |
| • 866/867-BR2.5 Burden resistor | Part no. 81088325 |
| • 867-700-SC, 2m shielded cable | Part no. 65889610 |
| • 867-700-BB $\phi 30$ mm busbar | Part no. 71089076 |